LONDON DAILY EXPRESS JAN 9 1956 Aq. 3-1

THE SOVIET 'SCIENTIST ARMY': THE FACTS

by ALLEN W. DULLES

THE DIRECTOR OF U.S. CENTRAL INTELLIGENCE AND BROTHER OF JOHN FOSTER DULLES, PRESIDENT EISENHOWER'S SECRETARY OF STATE

PREFACE by Sefton Delmer

BY A COLOSSAL effort the Kremlin has in the last 25 years built up a new mass army which in my view is more dangerous to Western security than its orthodox armed forces.

The new army is an army of scientists. Their job: to increase the technical might and machine striking power of the Soviet Union to the point where it can crush the capitalist world.

Mr. Allen W. Dulles, Director of the U.S. Central Intelligence Agency, has taken the Western World into his confidence with a lucid and sober assessment.

In an address to top educators at Columbia University, when he was awarded an honorary doctorate of laws, Mr. Dulles defined the challenge that only this past week brought forth a renewed warning from Britain's Sir John Cockcroft.

I considered Mr. Dulles's analysis of such importance that I asked permission from him to publish it in the Daily Express. . . .

Between 1950 and 1960 the Soviet will graduate 1,200,000 in the sciences . . .

THE key to the future of any society lies very largely in its educational system.

Scientific and technical education in the Soviet Union today presents a challenge to the Free World.

But mass education in the Soviet Union may well become a threat to their own Communist system of government.

The Soviets have two educational goals.

First, to condition the Soviet people to be proper believers in Marxist-Leninism and to do the bidding of their rulers.

Second, to turn out the necessary trained techniciahs to build the military and industrial might of the U.S.S.R.

In the field of science the Soviets have made rapid progress and their accomplishments here should not be minimised; least of all by those of us who are directly concerned with our national security.

Twenty-five years ago, Soviet scientific education was riddled with naive experiments, persecution of scholars, and unrealistic programmes.

Our equals

TODAY that is no longer so. The Soviet education system—in the sciences and engineering—now bears close comparison with ours, both in quality of training and in numbers of persons trained to a high level.

Also, we have the evidence obtained from defectors, some of them recent, who were university graduates.

Although these men have come over to us because of their detestation of the Soviet system, many of them still pay tribute to the technical quality of their education.

As regards Soviet scientific manpower as a whole, the quality differs greatly from field to field. But generally speaking their top men appear to be the equal of the top men in the West.

Also, their agricultural sciences have been backward, plagued like all of Soviet agriculture by the follies of the collective system. What farmer will go out into the middle of a cold Russian night to see what ails a State-owned cow?

In the physical sciences, there is little evidence of such political interference. Soviet mathematics and meteorology, for example, appear to be clearly on a par with those of the West, and even ahead in some respects. Military needs dominate their research programmes.

In fact, at times we have been surprised at their progress, above all in the aviation, electronic, and nuclear fields. Certainly, the Russian's mind, as a mechanism of reason, is in no way inferior to that of any other human being.

Improvement

THE Soviets, however, have rarely been slavish copyists, at least where a Western invention or technique was of military importance.

They have employed adaptation rather than adoption, as in the case of their improvement of the Nene jet engine. In certain key fields they have clearly shown a capacity for independent progress.

While total Soviet scientific manpower at the university graduate level is about the same as ours — somewhere over 1,000,000 each—about half of the Soviet total were trained by the inferior pre-war standards. In number of research workers—a good index of average quality—we estimate that the U.S. has a 2—1 margin over the U.S.S.R. in the physical sciences.

Experience

WE must remember too that the U.S. has a substantial number of competent engineers who have not taken university degrees, but have learned their trade through experience. The U.S.S.R. has no real counterpart for this group, just as it has no substantial counterpart for the vast American reservoir of persons with high-grade mechanical skills.

Lest we become complacent, it is well to note that the Soviets are now turning out more university graduates in the sciences and engineering than we are—about 120,000 to 70,000 in 1955.

In round numbers, the Soviets will graduate about 1,200,000 in the sciences in the 10 years from 1950 to 1960, while the comparable U.S. figure will be about 900,000.

Priority

UNLESS we quickly take new measures to increase our own facilities for scientific education, Soviet scientific manpower in key areas may well outnumber ours in the next decade.

These comparisons in the scientific field most emphatically do not mean that Soviet higher education as a whole is as yet comparable to that of the U.S. Over 50 per cent of Soviet graduates are in the sciences, against less than 20 per cent in the U.S. Science in the U.S.S.R. has had an over-riding priority.

Another important feature of Soviet education is the growth of secondary education at the senior high school level.

By 1960 the Soviets will have four-five times as many secondary graduates per year as they had in 1950.

These will be divided fairly evenly between men and women.

Whereas a decade ago only about 20 per cent of Soviet seventh grade students went any further, by 1960 probably over 70 per cent will do so. Their secondary school standards are high and largely explain their ability to train competent scientists and engineers. Whether they can maintain these standards in the face of a very rapid expansion is a question.

Compulsion

TO repay the Government for his or her so-called "free" education, Soviet law requires that each student upon graduation must work for three consecutive years as the State directs.

(OVER)

Even at the end of the three-year compulsory assignment, the individual still is under the control of the Communist Party, the Young Communist League, the local union, or the factory directors.

Thus, the typical Soviet university graduate gains little freedom from his status as an educated man.

In time, with the growth of education—with more knowledge, more training of the mind, given to more people—this Soviet "man divided" must inevitably come to have more and more doubt about the Communist system as a whole.

In the past, we have sometimes had exaggerated expectations of dissensions within the Soviet and in other totalitarian systems. Personally I believe our hopes have not perhaps been so much misguided as they have been premature.

TOMORROW: How the Kremlin could trip itself up.

THE HEART of the CONTROVERSY

Are we in Britain hypnotised by the Arts?

In the face of the Russian advances in technology disclosed on this page today, can we afford that bias towards the classics which is still a feature of our scholastic system?

Isn't it time we had a British equivalent of the Massachusetts Institute of Technology — a technological university with the same status as Oxford or Cambridge?

Or is the risk of turning out a generation of men who know everything about science and nothing about life too high a price to pay?

If YOUR son could be a Doctor of Literature or a Doctor of Science—which would you advise him to take?

Your views, please.